tubular arms, slightly inclined to one another, are attached to this plate; and their other extremities are connected by a cross-piece, which carries a short scale at a distance of eighteen inches from the mirror. This part of the apparatus is employed in determining the total angles of deflection.

The soft iron bar is a cylinder, twelve inches long, and three-fourths of an inch in diameter. One of its extremities is enclosed in a hollow cylinder of brass, connected with a horizontal pivot which revolves in a fixed socket. The axis of this pivot being in the line passing through the centre of the suspended magnet, and perpendicular to the magnetic meridian, it is obvious that the bar has a movement of rotation in the plane of the magnetic meridian itself. The distance of the axis of the bar from the centre of the magnet is about five inches; and it is so placed that the induced pole is in the direction of the axis of the pivot, and thus remains fixed during the movement of the bar.

The changes of position of the suspended magnet are observed at a distance by means of a fixed telescope and scale. The scale, whose divisions are reflected by the mirror, is attached above the telescope to the support near the eye-end.

Dr. Fulton made some observations on Grecian and Roman Architecture.

February 14.

SIR WM. R. HAMILTON, LL.D., President, in the Chair.

Captain Stirling, 73rd Regt., Rev. Thomas Stack, F.T.C.D., Joseph Nelson, Esq., Q.C., and Rev. Robert Chatto, were elected members of the Academy.

Dr. Anster read a paper, by the Rev. J. Wills, upon Mr. Stewart's attempt to explain certain processes of the

Human Understanding, on the supposition that it acquires, by habit, an acceleration in the succession of ideas, so great as to escape the consciousness.

After having observed that Mr. Stewart's error consisted, not in his reasoning, but in having failed to observe that his facts are themselves complex results which demand a minute analysis, and having also dwelt upon some elementary errors to which he mainly attributed the entire of Mr. Stewart's theory, the author proceeded to a detailed investigation of the several examples brought forward in its support.

He first stated the case of a player on the harpsichord, whose rapidity of execution is adduced to illustrate the proposition that so many separate acts of will and attention, as it seems to involve, are so accelerated as to take place without any consciousness of their separate occurrence. On this he observed, that, to a very great extent, the separate acts assumed could have no existence, by reason of the absolute coincidence, in point of time, of the rapid and complex movement of the musician's hand; from which he inferred, that some other law must be sought for to explain the phenomena. To discover this law, the author proceeded to examine the process of the mind in the acquisition of the art by which the complex and simultaneous movements are effected. These are, he observed, first separately attended to and separately executed; but so long as this separateness continues, it is evident that the required result is not attained. Slowly, however, and by frequent repetition of the same set of ideas presented in combination, this combination itself becomes the object of perception; and from being separate ideas and movements, they become simultaneous, and assume the new form of a single complex conception, executed by a complex movement. In confirmation of this inference, he observed, that the slightest attempt to attend to any of the component parts would disconcert the best skill. He also observed, that Mr. Stewart had been in some degree misled by having

generally fixed his attention on examples in which the component ideas are successive in the order of occurrence. He observed upon a considerable class of cases which are decisive against Mr. Stewart, being composed of very complex acts, of which the separate parts are never recognized, such as the class of movements called " mechanical."

The author next entered on a detailed view of Mr. Stewart's example of a person reading, and showed that the same reasoning is applicable. He noticed the complication of trains of thought, which, according to Mr. Stewart's theory, must be simultaneously proceeding; and also observed, that his theory could not stop short at any point of these; and that wherever he might attempt to stop, an explanation should be given, which ought to supersede his whole theory. He then pursued the inquiry as in the previous example, by investigating the mind's progress in learning to read, and deduced similar conclusions. These he also confirmed, by noticing the various errors which occur in reading and printing; of these he showed, that they illustrate the effect of the combinations or complex conceptions previously formed to supply even the want of many of the component parts; so that the letter is inferred from the general form of the syllable, and the syllable from that of the word, rather than the contrary process. From this example he concluded, that the mind, by repeated acts of attention, acquires a stock of syllabic and vocal associations, of which the act of reading is a combined result; that by a further extension, written sentences may become combined with a process of thought, and that every reader possesses some range of thought thus symbolized by habit; and finally, that the general inference to be drawn from this and other similar examples is, that by means of habit, groups of signs, of movements, facts, thoughts, sensations or phenomena, may acquire varied relations to each other; and that these being acquired, the combination alone becomes the object of notice. He then pursued the applica-

tion of the same reasoning to some other examples, not noticed by Mr. Stewart, which he observed were better adapted for illustration; and then proceeded to notice briefly the application of the same principles to the other examples adduced by Mr. Stewart.

He then reverted to an explanation of Mr. Stewart's and of other writers, concerning the perception of the distance of visible objects; and after noticing the fallacy which it involved, he showed it to be explicable by the same general process as in the former cases.

He next observed that the numerous errors arising from the same law of habit might be made use of to illustrate or prove the same conclusions; and explained, at some length, the illusion of faces and other visual phenomena framed by the imagination.

After several observations on the comparative difficulties of Mr. Stewart's method and his own, the author noticed the distinction between the previous cases, in which there is an apparent character of combination, and others in which a difficulty must seem to arise from continuity. He then went at considerable length to apply the same reasoning to the case of the orator, as adduced by Mr. Stewart, and more fully described by Lord Brougham. He lastly adverted to Mr. Stewart's explanation of dreams, and showed that it involved some important contradictions and inconsistencies; and that, contrary to Mr. Stewart's assertion, it implies a new law of mind. He then showed that it could be explained by the same method which he had already applied to the other examples. And after some explanations of the manner in which the law of suggestion operated in dreams, he observed, in conclusion, that Mr. Stewart had set out with a notion adapted to lead him astray; which he thought to be a subject of regret, as the line of investigation which he had selected would otherwise have offered a clearer and better evidenced founda-

tion for metaphysical science than any which had been previously adopted.

DONATIONS.

Catalogue of the Works of Art in the Possession of Sir Peter P. Rubens, at the Time of his Decease. Presented by Dawson Turner, Esq.

Ueber die Himjaritische Sprache und Schrift. Von Dr. W. Gesenius. Presented by the Author.

A Descriptive Vocabulary of the Language of the Aborigines of Western Australia. By G. Fletcher Moore, Esq. Presented by the Author.

Magnetische und Meteorologische Beobachtungen zu Prag. Vom 1 Juli 1839, bis 31 Juli 1840. By Karl Kreil. Presented by the Author.

Proceedings of the American Philosophical Society. Vol. II. No. 19.

A Record of the Case of Mary Jobson. By W. R. Clanny, M. D., &c. Presented by the Author.

February 28.

REV. HUMPHREY LLOYD, D. D., Vice-President, in the Chair.

Dr. Evory Kennedy read a paper on the peculiar System of Generation, and Habits, observed by him to prevail in certain Acephalocysts, parasitical animals inhabiting the human body, and belonging to the class of hydatid entozoa.

Having considered their animal nature, and their primary formation, as involving the question of spontaneous generation, he described generally the methods of reproduction adopted in this class of animals, and adduced the explanations and opinions offered by the best authorities on the